

CLAIMS:

1. A method of purifying nucleic acid from a sample solution in a container, comprising causing relative movement between the container and a filtration unit, the filtration unit being disposed at least partly within the container and having a filter and a filtrate chamber, whereby the sample is made to pass through the filter into the filtrate chamber.  
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2. A method according to claim 1 wherein an exterior surface of the filtration unit forms a seal with an interior surface of the container.  
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3. A method according to claim 1 or claim 2 wherein the filtration unit comprises at least upstream and downstream filters in series.  
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4. A method according to claim 3 wherein the upstream filter has a higher size exclusion threshold than the downstream filter.  
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5. A method according to any one of claims 1 to 4 wherein the container is a centrifuge tube.  
6. A method according to any one of the preceding claims comprising further purifying nucleic acid from the filtrate.  
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7. A method according to claim 6 comprising contacting the filtrate with a nucleic acid binding agent.  
8. A method according to claim 7 wherein the nucleic acid binding agent is a charge-switch agent.

9. A method according to claim 7 or claim 8 comprising passing the filtrate through a cartridge comprising said nucleic acid binding agent.

5 10. A method according to claim 9 wherein the filtrate is drawn through said cartridge by suction.

11. A method according to claim 10 wherein the filtrate is drawn through the cartridge by a syringe.

10 12. A method according to any one of claims 7 to 11 further comprising washing the nucleic acid binding agent.

15 13. A method according to any one of claims 7 to 12 further comprising eluting the nucleic acid from the nucleic acid binding agent.

20 14. A method according to claim 6 comprising further purifying nucleic acid from the filtrate by buffer exchange or precipitation.

15. A method according to claim 14 wherein said buffer exchange comprises dialysis or ultrafiltration.

25 16. A filtration unit for use in a method of nucleic acid isolation, comprising a barrel having a continuous bore therethrough and a filter disposed within the bore

30 17. A filtration unit according to claim 16, comprising a seal adapted to make sealing engagement with the interior wall of a standard centrifuge tube.

18. A filtration unit according to claim 17 wherein the seal comprises an annular flange.

19. A filtration unit according to claim 18 wherein the annular flange has a substantially rigid inner portion and a flexible outer portion.

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20. A filtration unit according to any one of claims 16 to 19 comprising two filters of different exclusion thresholds disposed within the bore.

10 21. A filtration unit according to any one of claims 16 to 20 wherein the exterior surface of the barrel carries projections adapted to reduce lateral movement of the plunger within a centrifuge tube.

15 22. A filtration unit according to claim 21 wherein said projections are longitudinal vanes or transverse flanges.

20 23. A filtration unit according to any one of claims 16 to 22 comprising a tip having a shape complementary to the interior contour of the bottom of a standard centrifuge tube.

24. A filtration unit according to claim 23 wherein the tip has a tapered or rounded cross section.

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25. A kit comprising a filtration unit according to any one of claims 16 to 24 and a nucleic acid binding agent.

30 26. A kit according to claim 25 wherein the nucleic acid binding agent is in pre-packed column format.

27. A kit according to claim 26 wherein the column is in the form of a cartridge adapted for connection to a syringe.

28. A kit according to claim 27 wherein the cartridge comprises an elongate tip for drawing a sample through the nucleic acid binding agent.

5 29. A kit according to any one of claims 25 to 28 wherein the nucleic acid binding agent is a charge switch agent.

10 30. A kit according to any one of claims 25 to 29 comprising a tube having an internal surface capable of making sealing contact with the filtration unit.

31. A kit according to any one of claims 25 to 30 further comprising one or more wash and/or elution reagents.

15 32. A kit according to any one of claims 25 to 31 further comprising a sample extraction buffer reagent and/or a protein precipitation reagent.